



Tutorial 6

- 1) Design a full subtractor circuit with 3 inputs x , y , z and two outputs D and B that compute $(x - y - z)$. Where D is the difference and B is the borrowed.
- 2) Design a circuit that adds one to 3 inputs A , B and C except for the input 111 the output will be zero.
- 3) Design a 2's complement circuit for 3 bit input, for input zero let its 2's complement is also zero.
- 4) Design and implement a 3-bit combinational circuit that adds one to inputs with even number of ones and subtract one from inputs with odd number of ones.
- 5) Design a combinational circuit with three inputs, x , y , and z , and three outputs, A , B , and C . When the binary input is 0, 1, 2, or 3, the binary output is one greater than the input. When the binary input is 4, 5, 6, or 7, the binary output is two less than the input.
- 6) Design a 3-input majority circuit, A majority circuit is a combinational circuit whose output is equal to 1 if the input variables have more 1's than 0's. The output is 0 otherwise.